

CLAIMS

We claim:

1. An instrument comprising a node at the distal end of a shaft, wherein a surgical tool can be inserted through the node and the node can be rotated allowing manipulation and orientation of the surgical tool at the distal end of the shaft through control remote from the distal end of the shaft, and comprising a channel for the removal of plaque from a blood vessel.
2. An instrument as in claim 1 wherein said node comprises a substantially spherical ball having an opening therethrough large enough to permit the insertion of a surgical tool wherein the orientation of the node can be controlled using a plurality of lines located at positions which allow rotation of the node in both (X) and (Y) coordinates.
3. An instrument as in claim 1 further comprising an additional second node, and a light source and camera positioned at the distal end of said shaft.
4. An instrument comprising (i) a plurality of cameras located at the distal end of a shaft and positioned so that they can convey a stereoscopic image to an operator, (ii) a light source; and (iii) a surgical tool located at the distal end of said shaft.
5. An instrument as in claim 4 further comprising a port for the delivery of fluid to the distal end of said shaft.
6. An instrument as in claim 4 further comprising a port for the delivery of a balloon to the distal end of said shaft.
7. An instrument as in claim 4 wherein said cameras comprise RGB chips.
8. An instrument comprising:
 - (i) a node at the distal end of a first shaft, wherein a surgical tool can be inserted through the node allowing manipulation and orientation of the tool at the distal end of the first shaft through control remote from the distal end of the first shaft;

(ii) a plurality of cameras located at the distal end of the first shaft positioned so that they can convey a stereoscopic image to an operator;

(iii) a light source; and

(iv) an inner second shaft connected to a balloon, which inner second shaft is extendable relative to the first shaft.

9. An instrument as in claim 8 further comprising an additional second node.

10. An instrument as in claim 8 further comprising a port for the delivery of fluid to the distal end of said shaft

11. An instrument as in claim 8 further comprising a port for the delivery of a balloon to the distal end of said shaft.

12. An instrument as in claim 8 wherein said shaft is flexible, and wherein the position of the distal end of the shaft can be oriented by the control of wires within the shaft which are capable of causing the shaft to bend.

13. An instrument as in claim 8 further comprising (a) additional tools stored within said shaft and (b) a changer to allow the substitution of different tools without requiring access to the distal end of the shaft or withdrawal of the tools from the shaft.

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